Work It Out @ Home

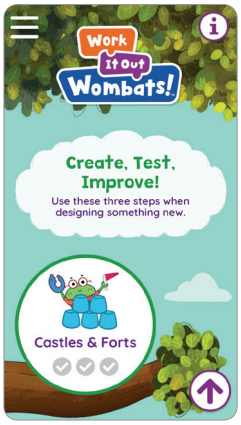
Work It Out Wombats!™

Family Guide

Create. Test. Improve!

- Watch *Wombats!* videos
- Do activities with the *Work It Out Wombats!* Family App
- Make music videos starring your child
- Learn more about preschool computational thinking
- Get tips on doing activities with your child

Work It Out Wombats! Family App

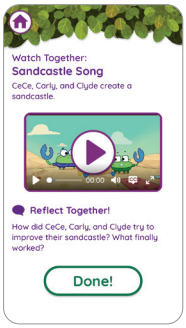


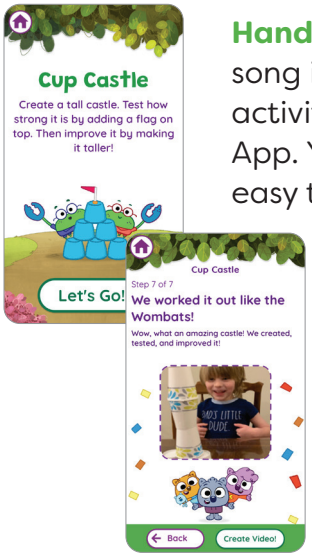
Get ready to have fun with the *Work It Out Wombats!* Family App! The App has everything you need to guide your child while doing computational thinking (CT) activities. Once you download the App, it will work anywhere—you won't need your phone's data plan or the internet to use it.

The App is designed for you and your child to use together in a variety of ways: by watching, creating, listening, discussing, and playing. The more ways you explore CT, the more ways your child can learn!

Here's what's in the App:

Animated Stories and Songs from the PBS KIDS Show *Work It Out Wombats!* The three Wombat siblings and their friends go on adventures and use their CT skills to solve problems.





Hands-On Activities. Each animated story or song in the App leads to two related hands-on activities. Instructions for the activities are in the App. You'll just need a few materials that are easy to find at home.

Music Videos. You'll be prompted to take photos of your child as you do the activity steps. When the activity is done, the App will create a music video, complete with *Wombats!* graphics and music. It's thrilling for children to see themselves starring in a video, and it's a great way to help them review and understand what they've learned about CT.

Download the free *Work It Out Wombats!* Family App. It's available on the App Store and on Google Play.

Download on the App Store

GET IT ON Google Play

Preschool Computational Thinking (CT)

Computational Thinking, or CT for short, doesn't teach children *what* to think but *how* to think.

CT is a creative way of thinking that helps children solve problems in more organized ways, using a toolkit of skills from computer science.

All of us use CT every day!

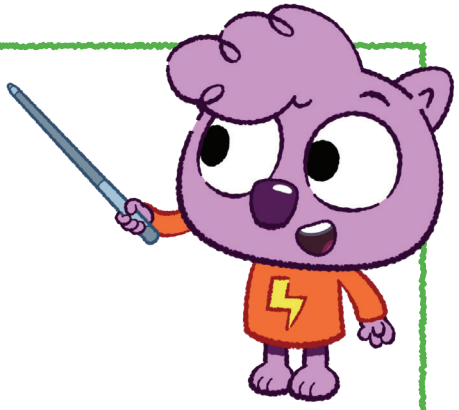
We may not realize it, but we use computational thinking (CT) skills all the time—and not just when we're on a computer.

- When you perfect a recipe, you probably use the three-step CT skill called the **design process**: create, test, improve.
- When you run errands, you're using the CT skill of **sequences and algorithms**—you think about the tasks you need to complete and decide on which order to do them in.
- When you have a big job to tackle, like putting together a birthday party, you use the CT skill of **problem decomposition** to break down this big job into smaller, more manageable jobs to make it easier to accomplish.

Young children are already using CT skills too—when, for example, they build something out of blocks and test out how to make it work the way they want it to, or when they break down the big job of helping set the table for dinner into smaller tasks.

How CT benefits your preschooler

CT is something that can be nurtured at a young age, and it can be practiced without a computer. Just as children learn to sing the alphabet before they learn to read, preschoolers can learn basic CT skills, which sets the groundwork for more complex skills later on.



Here are a few examples of what it looks like when preschoolers use CT skills. It helps them to:

- understand and follow directions
- take a step-by-step approach when completing tasks
- make plans and stick with them
- revise those plans if there's a better approach

Strengthening young children's CT skills helps them think more logically and effectively, fosters creative and flexible thinking, and encourages focus and perseverance—qualities that will serve them throughout their lives.

Create, Test, Improve!

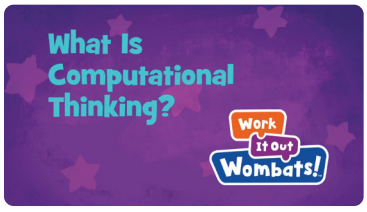
The *Work It Out Wombats!* TV show introduces children to eight different CT skills. This library unit focuses on one of the most important: **the design process**. The Wombats call it: ***Create, Test, Improve!***

It's a three-step process to help you make something, like a work of art or an invention. Children will practice this skill by making blanket forts, unicorn crowns, mini spaceships, and other fun creations.

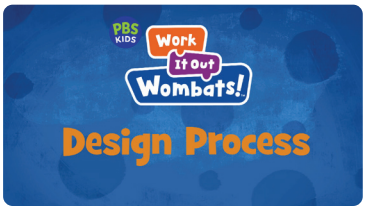
1. **Create:** Use your imagination to make something new.
2. **Test:** See how well it works.
3. **Improve:** Use what you learned from testing to make it better.

Keep testing and improving. Repeat the steps until you're satisfied with the results!

To learn more about CT, watch the video ***What Is Computational Thinking?*** by scanning the QR code.



Here's a short video on this CT skill: ***Design Process***



Family Engagement Tips

Ways to support and encourage your child while doing the activities

The App is designed for adults and children to use together. Research shows that young children who do activities with an adult learn more than children who do activities on their own. You are your child's first teacher!

In the App, you'll see that Gramma Super occasionally appears with tips for you. Her tips fall into four broad categories:

1. **Let your child take the lead.** Show interest in what excites your child and guide their explorations without taking over. Putting children in charge gives them more control over their experiences and keeps them focused and having fun.
2. **Help your child share their ideas.** Ask questions to start a conversation and encourage your child to talk about what they are doing. Prompting your child to explain their thinking helps them understand that problems can be approached in an organized and creative way.
3. **Encourage your child to keep trying, even when it's hard.** Give your child time to work out a problem before offering to help. This allows them to develop perseverance and confidence in their own problem-solving abilities.
4. **Reflect together on what you've done.** Give your child time and space to think and talk about what they've done when they've completed something. Looking back on their experiences helps children understand, remember, and build upon what they learned.

For more about the Family Engagement Tips, watch the video ***How Do You Support Your Children's Computational Thinking?***

Get Ready for Your Next Work It Out @ Your Library Sessions

Here's what will happen in the next two sessions:

WEEK 2
Story Time Session

- Listen to some great storybooks about **creating, testing, and improving!**
- Dance with Wombats stick puppets and play with friends!
- Visit the CT Corner and pick up fun resources and handouts!
- Check in with your librarian. This is your time to ask questions or talk about your experiences using the App, doing the hands-on activities, making the music videos, or trying out the Family Engagement Tips with your child.

WEEK 3
Share and Celebrate Session

- Share your experiences working it out like the Wombats with other families!
- Watch a video and do another fun activity together.
- Celebrate and receive a Certificate of Achievement!

Here's what to bring to the library for this session:

- Your phone with the *Work It Out Wombats!* Family App.
- Choose one of the music videos you made using the App—you'll share it with another family during the session.
- It's optional, but if you can, bring in an activity you did at home (like the *Stuffie Slide* or the *Unicorn Crown*).
- Tell your child you're going to talk about videos and activities when you go to the library. Ask your child which ones they'd like to tell the other families about. Talk about it ahead of time to make it easier for your child to speak up when it comes time to share with the group.

Funding for *Work It Out @ Your Library* is provided by

Work It Out @ Your Library includes animated videos from *Work It Out Wombats!*, which is produced by

Corporate Sponsors

Major Funding

Additional Funding

This content was developed under grants from the Department of Education and from the National Science Foundation. However, this content does not necessarily represent the policy of the Department of Education and/or the opinions, findings and conclusions of the National Science Foundation, and you should not assume endorsement by the Federal Government. The project is funded by a Ready To Learn grant [PR/Award No. S295A200004, CFDA No. 84.295A] provided by the Department of Education to the Corporation for Public Broadcasting and by a grant from the National Science Foundation (DRL-2005975) to WGBH Educational Foundation.

Create, Test, Improve!

Work It Out Wombats!™

Wombats! Activity Tracker

Each time you complete an activity, check it off here! How many can you complete?

- ☐ Cup Castle
- ☐ Blanket Fort
- ☐ Mini Spaceship
- ☐ Unicorn Crown
- ☐ Stuffie Slide
- ☐ Game Design

Hang the tracker on your refrigerator or a bulletin board.

Funding for *Work It Out @ Your Library* is provided by NSF

Work It Out @ Your Library includes animated videos from *Work It Out Wombats!*, which is produced by GBH Kids and Pipeline Studios

Corporate Sponsors: PLTW Project Lead The Way, Target, McCormick

Major Funding: U.S. Department of Education, cpb Corporation for Public Broadcasting

Additional Funding: NSF, The Siegel Family Endowment, The Arthur Vining Davis Foundations, GBH Kids Catalyst Fund